



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/874,876	06/05/2001	Ajit Kumar Reddy	Reddy 1	5997
46363	7590	07/01/2005	EXAMINER	
MOSER, PATTERSON & SHERIDAN, LLP/ LUCENT TECHNOLOGIES, INC 595 SHREWSBURY AVENUE SHREWSBURY, NJ 07702			BURD, KEVIN MICHAEL	
			ART UNIT	PAPER NUMBER
			2631	

DATE MAILED: 07/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/874,876

Applicant(s)

REDDY, AJIT KUMAR

Examiner

Kevin M. Burd

Art Unit

2631

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 June 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-10,12-14 and 16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-10,12-14 and 16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 6/20/2005 has been entered.

Response to Arguments

2. Applicant's arguments, see the remarks on pages 9-14, filed 6/20/2005, with respect to the rejections of the claim under 35 USC 103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of the instant application's disclosed prior art and Balakrishnan et al (US 6,611,567).

3. The indicated allowable subject matter of claims 5 and 13 is withdrawn in view of the newly discovered reference to Balakrishnan et al (US 6,611,567). Rejections based on the newly cited reference follow.

Claim Objections

4. Claim 16 is objected to because of the following informalities: Claim 16 is dependent on claim 15. Claim 15 is cancelled. Claim 16 should be dependent on claim 10. Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1, 3-10, 12-14 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over the instant application's disclosed prior art in view of Balakrishnan et al (US 6,611,567).

Regarding claim 1, the instant application's disclosed prior art shows an encoder in figure 1. The encoder includes a constellation mapper (generator) 130 that is responsive to an input bit stream to produce an impulse comprising an in-phase and a quadrature component (page 1, lines 26-30). A pair of filters 140, 150 (vector arithmetic structures – VAS) adapts a respective one of in-phase or quadrature components to produced shaped components (page 1, line 31 to page 2, line 1). The outputs are combined 160 to produce an encoded bit stream (page 2, lines 1-4). The prior art does not disclose the VAS comprises a plurality of vector registers and a vector arithmetic unit (VAU). Balakrishnan discloses a method and apparatus for pulse shaping. Registers store the data from table 1 and table 2 (column 3, lines 55-63; column 4, lines 17-28 and column 5, lines 8-17). These coefficients are used to shape the pulses (column 4, lines 30-42). An arithmetic unit is used to shape the pulses (column 2, lines 30-50). It would have been obvious for one of ordinary skill in the art at the time of the invention to combine the pulse shaper of Balakrishnan with the encoder of the instant

application's disclosed prior art. This pulse shaper greatly simplifies the circuit complexity and reduces the amount of power consumed by performing relatively few mathematical operations (column 2, lines 21-28).

Regarding claim 3, the output from the combining of the symbol and the coefficient is stored (column 6, lines 1-21).

Regarding claim 4, the output of the latch 22 is input to the arithmetic unit in figure 7.

Regarding claim 5, Balakrishnan further discloses when the first bit has a value of "0", addition of the coefficient is required. When the first bit has a value of "1", subtraction of the coefficient is required (column 5, lines 8-17).

Regarding claim 6, the constellation of symbols comprises carrierless amplitude and phase symbols (instant, page 1, lines 10-11). Balakrishnan discloses pulse shaping for QAM (column 7, lines 40-42).

Regarding claim 7, the constellation of symbols comprises QAM encoded symbols (instant, page 1, lines 10-11). Balakrishnan discloses pulse shaping for QAM (column 7, lines 40-42).

Regarding claim 8, Balakrishnan discloses this pulse shaper greatly simplifies the circuit complexity and reduces the amount of power consumed by performing relatively few mathematical operations (column 2, lines 21-28).

Regarding claim 9, the pulse shaping is done to filter the signal (column 11, lines 37-40).

Regarding claim 10, the instant application's disclosed prior art shows a method for using an encoder in figure 1. The encoder includes a constellation mapper (generator) 130 that is responsive to an input bit stream to produce an impulse comprising an in-phase and a quadrature component (page 1, lines 26-30). A pair of filters 140, 150 (vector arithmetic structures – VAS) adapts a respective one of in-phase or quadrature components to produced shaped components (page 1, line 31 to page 2, line 1). The outputs are combined 160 to produce an encoded bit stream (page 2, lines 1-4). The prior art does not disclose the VAS comprises a plurality of vector registers and a vector arithmetic unit (VAU). Balakrishnan discloses a method and apparatus for pulse shaping. Registers store the data from table 1 and table 2 (column 3, lines 55-63; column 4, lines 17-28 and column 5, lines 8-17). These coefficients are used to shape the pulses (column 4, lines 30-42). An arithmetic unit is used to shape the pulses (column 2, lines 30-50). It would have been obvious for one of ordinary skill in the art at the time of the invention to combine the pulse shaper of Balakrishnan with the encoder of the instant application's disclosed prior art. This pulse shaper greatly simplifies the circuit complexity and reduces the amount of power consumed by performing relatively few mathematical operations (column 2, lines 21-28).

Regarding claim 12, the coefficients are added to the received value (column 11, lines 46-56).

Regarding claim 13, Balakrishnan discloses this pulse shaper greatly simplifies the circuit complexity and reduces the amount of power consumed by performing relatively few mathematical operations (column 2, lines 21-28).

Regarding claim 14, the constellation of symbols comprises pulse code modulated symbols (instant, page 1, lines 13-16).

Regarding claim 16, the outputs are combined 160 to produce an encoded bit stream (instant, page 2, lines 1-4).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin M. Burd whose telephone number is (571) 272-3008. The examiner can normally be reached on Monday - Thursday 9 am - 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad Ghayour can be reached on (571) 272-3021. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Kevin M. Burd
6/29/2005

**KEVIN BURD
PRIMARY EXAMINER**